ABSTRACT

The symbol points of a received signal can be more precisely measured. A symbol point estimating apparatus (1), which estimates the symbol points of a received signal z(k) by deciding a time delay τ between sampling points of the received signal z(k) as sampled at a sampling frequency fs and the symbol points of the received signal z(k), comprises a multiplication/sum of products output unit (10) for outputting a sum of products $Ae^{j\theta}$ of respective products Y(n) = Z(n)R(n)* obtained by multiplying a complex conjugate R(n)* of a frequency component R(n) of an ideal signal r(k) by a frequency component Z(n) of the received signal z(k) and a sampling angular frequency $\Delta\omega$ (= 2πfs/N, where N is an error component calculation length between the ideal signal r(k) and the received signal z(k)); and a time delay determining unit (20) for determining, based on the output of the multiplication/sum of products output unit (10), the time delay τ such that an error component EVM between the ideal signal r(k) and the received signal z(k) is minimized.